

Your teacher took this test. Grade the test and correct any errors!

Chapter 5 Test

Name _____

Date _____

1. Find the LCM of 18 and 48.

$$\begin{array}{r} 48 \\ \times 18 \\ \hline 384 \\ 48 \\ \hline 864 \end{array}$$

$$\text{LCM} = 864$$

2. Compare the fractions. Use $>$, $<$, $=$ to complete each statement.

a. $\frac{7}{9} \boxed{<} \frac{7}{11}$ because 11 is larger than 9

b. $\frac{3}{4} \boxed{>} \frac{2}{3}$ because: $\frac{3}{4} = .75$ $\frac{2}{3} = .\overline{6}$
 $.75 > .\overline{6}$

3. Write each fraction as a decimal.

a. $\frac{7}{8} = .875$ because

$$\begin{array}{r} .875 \\ 8 \overline{) 7.000} \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

b. $\frac{5}{6} = 1.2$ because $\begin{array}{r} 1.2 \\ 5 \overline{) 6.0} \\ \underline{5} \\ 10 \\ \underline{10} \\ 0 \end{array}$

4. Write each decimal as a fraction or mixed number.

a. $.75 = 75\%$ because you move the decimal two places to the right.

b. $8.\overline{6} = 8\frac{2}{3}$ because $\begin{array}{r} 10x = 86.\overline{6} \\ - x = -8.\overline{6} \\ \hline 9x = 78 \\ x = \frac{78}{9} \\ = 8\frac{2}{3} \end{array}$

5. Add or subtract

a. $4\frac{2}{3} + \frac{1}{4} = \frac{14}{3} + \frac{1}{4} = \frac{56}{12} + \frac{3}{12} = \frac{59}{12} = 4\frac{11}{12}$

b. $1\frac{3}{4} - \frac{7}{8} = \frac{7}{4} - \frac{7}{8} = \frac{14}{8} - \frac{7}{8} = \frac{7}{8}$

6. Find each product or quotient.

a. $\frac{3}{4} \cdot \frac{3}{10} = \frac{6}{40} = \frac{3}{20}$

b. $-\frac{3}{4} \div \frac{7}{8} = -\frac{3}{4} \cdot \frac{8}{7} = -\frac{6}{7}$

c. $1\frac{1}{2} \div \frac{3}{4} = \frac{2}{3} \cdot \frac{4}{3} = \frac{8}{9}$

7. Complete the statement. 42 inches = $\boxed{3\frac{1}{2}}$ feet because 12 inches = 1 foot

$$\frac{42 \text{ in.}}{1} \cdot \frac{1 \text{ foot}}{12 \text{ in.}} = \frac{7}{2} \text{ ft} = 3\frac{1}{2} \text{ ft.}$$

8. Solve the equations.

a. $\frac{1}{3} + x = 3\frac{5}{6}$ $3\left(\frac{1}{3} + x\right) = 3\left(3\frac{5}{6}\right)$

$$x = 9\frac{5}{6}$$

$$x = 11\frac{1}{2}$$

b. $-\frac{1}{3}x = 2\frac{7}{9}$ $(-3)\left(-\frac{1}{3}x\right) = (-3)\left(2\frac{7}{9}\right)$

$$x = \frac{-3}{1} \cdot \frac{25}{9}$$

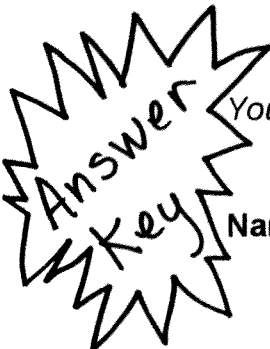
$$x = -\frac{25}{3}$$

$$x = -8\frac{1}{3}$$

9. Simplify

a. $(3w)^4 = 3^4 \cdot w^4$
 $= 81w^4$

b. $\left(\frac{x}{2}\right)^5 = \frac{5x}{10} = \frac{x}{2}$



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1. Find the LCM of 18 and 48.

$$\begin{array}{r} 48 \\ \times 18 \\ \hline 384 \\ 48 \\ \hline 864 \end{array}$$

LCM = 864

incorrect because
 $18 = 2 \cdot 3^2$
 $48 = 2^4 \cdot 3$
 $LCM = 2^4 \cdot 3^2 = 144$

2. Compare the fractions. Use $>$, $<$, $=$ to complete each statement.

a. $\frac{7}{9} \boxed{<} \frac{7}{11}$

because 11 is larger than 9

Incorrect

This is incorrect because $\frac{77}{99} > \frac{63}{99}$ which is the same as $\frac{7}{9} > \frac{7}{11}$

b. $\frac{3}{4} \boxed{>} \frac{2}{3}$

because: $\frac{3}{4} = .75$ $\frac{2}{3} = .\overline{6}$
 $.75 > .\overline{6}$

3. Write each fraction as a decimal.

a. $\frac{7}{8} = .875$ because

$$\begin{array}{r} .875 \\ 8 \overline{) 7.000} \\ \underline{64} \\ 60 \\ \underline{56} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

b. $\frac{5}{6} = 1.2$

because

$$\begin{array}{r} 1.2 \\ 5 \overline{) 6.0} \\ \underline{5} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

Incorrect because

$$\begin{array}{r} .8\overline{3} \\ 6 \overline{) 5.000} \\ \underline{48} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \\ \underline{18} \\ 20 \end{array}$$

$\frac{5}{6} = .8\overline{3}$

4. Write each decimal as a fraction or mixed number.

a. $.75 = 75\%$ because you move the decimal two places to the right.

This is incorrect because 75% is not a fraction. $.75 = \frac{75}{100} = \frac{3}{4}$

b. $8.\overline{6} = 8\frac{2}{3}$ because

$$\begin{array}{r} 10x = 86.\overline{6} \\ - x = -8.\overline{6} \\ \hline 9x = 78 \\ x = \frac{78}{9} \\ = 8\frac{2}{3} \end{array}$$

5. Add or subtract

a. $4\frac{2}{3} + \frac{1}{4} = \frac{14}{3} + \frac{1}{4} =$

$$\frac{56}{12} + \frac{3}{12} = \frac{59}{12} = 4\frac{11}{12}$$

b. $1\frac{3}{4} - \frac{7}{8} = \frac{7}{4} - \frac{7}{8} =$

$$= \frac{14}{8} - \frac{7}{8} = \frac{7}{8}$$

6. Find each product or quotient.

a. $\frac{3}{4} \cdot \frac{3}{10} = \frac{6}{40} = \frac{3}{20}$ incorrect because $\frac{3}{4} \cdot \frac{3}{10} = \frac{3 \cdot 3}{4 \cdot 10} = \frac{9}{40}$

b. $-\frac{3}{4} \div \frac{7}{8} = -\frac{3}{4} \cdot \frac{8}{7} = -\frac{6}{7}$

c. $1\frac{1}{2} \div \frac{3}{4} = \frac{2}{3} \cdot \frac{4}{3} = \frac{8}{9}$ incorrect because $1\frac{1}{2} \div \frac{3}{4} = \frac{3}{2} \div \frac{3}{4} = \frac{3}{2} \cdot \frac{4}{3} = 2$

7. Complete the statement. 42 inches = $3\frac{1}{2}$ feet because 12 inches = 1 foot

$$\frac{42 \text{ in}}{1} \cdot \frac{1 \text{ foot}}{12 \text{ in}} = \frac{7}{2} \text{ ft} = 3\frac{1}{2} \text{ ft}$$

8. Solve the equations.

a. $\frac{1}{3} + x = 3\frac{5}{6}$

$3\left(\frac{1}{3} + x\right) = 3\left(3\frac{5}{6}\right)$

$x = 9\frac{5}{2}$

$x = 11\frac{1}{2}$

Incorrect - should subtract $\frac{1}{3}$ from both sides.

$\frac{1}{3} + x = 3\frac{5}{6}$

$x = 3\frac{5}{6} - \frac{1}{3}$

$x = 3\frac{1}{2}$

b. $-\frac{1}{3}x = 2\frac{7}{9}$

$(-3)\left(-\frac{1}{3}x\right) = (-3)\left(2\frac{7}{9}\right)$

$x = -\frac{3}{1} \cdot \frac{25}{9}$

$x = -\frac{25}{3}$

$x = -8\frac{1}{3}$

9. Simplify

a. $(3w)^4 = 3^4 \cdot w^4$

$= 81w^4$

b. $\left(\frac{x}{2}\right)^5 = \frac{5x}{10} = \frac{x}{2}$ incorrect because $\left(\frac{x}{2}\right)^5 = \frac{x^5}{2^5} = \frac{x^5}{32}$